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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/287,307	04/07/1999	NORMAN K. SPROCH	0268P0342	6152

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ANTONIO R. DURANDO  
2929 E. BROADWAY BLVD  
TUCSON, AZ 85716

EXAMINER

PHAN, THAI Q

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 11/05/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

9

# Office Action Summary

Application No.  
09/287,307

Applicant(s)  
Norman K. Sproch

Examiner  
Thai Phan

Art Unit  
2123



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Aut. 15, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

### **DETAILED ACTION**

This Office Action is responsive to applicant's response filed Aug. 15, 2003. Applicant's argument in the Brief for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. Claims 1-18 are pending in this Office action

#### ***Drawings***

1. The drawings filed 04/07/99 are objected to by the draftsman (see PTO Form 948 attached in paper no. 4).

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuerstenau et al, patent no. 5,770,857.

As per claim 1, Fuerstenau discloses a method and system for determining physical property of large molecules with feature limitations substantially similar to the claimed invention (Abstract and Summary of the Invention). According to Fuerstenau, the method includes steps:  
mixing molecules to form a mixed solution of complex molecules for analysis,

performing electrospray ionization mass spectrometry to obtain spectroscopic data of the molecule complexes (Summary of the Invention, col. 3, lines 1-9, col. 4, lines 17-39, cols. 7-8, for example),

repeating the procedure steps above or feedback the experimental values as desired in order to obtain a physical property (col. 7, lines 3-24, lines 35-57, col. 8, lines 3-31, for example), and using the spectral data to characterize the properties of the complex molecule structures (col. 9, line 53 to col. 10, line 29, lines 30-50, for example). Fuerstenau does not expressly disclose a characterization of molecule structure as claimed.

Practitioner in the art at the time of the invention was made would have found Fuerstenau disclosed the method of determining physical properties of complex molecules including sizes, weights, surface structures on the molecules, etc. (col. 10, line 19 to col. 11, line 35) implies the claimed limitation of characterizing molecule structure because physical properties of the molecule complex characterization in Fuerstenau by determining molecule weight, surface structure, and molecule sizes are used to characterize molecule structure.

As per claim 2, Fuerstenau discloses computerized data processing system including plurality of means for performing steps, such as processing means for computing error data, improving resolution, etc., memory for storing computation results, as claimed (cols. 9-10, Figs 1-2, 9-10). Fuerstenau also discloses a computer would be used to simulate and improve the resolution model of the characterization process (col. 10, line 19 to col. 11, line 35).

As per claims 3-6, Fuerstenau discloses a variety of complex molecules such as DNA, proteins, protein complexes, polymer, macrocyclic polyethers, etc. as claimed being used in the process of characterization (Background of the Invention) .

As per claim 7, Fuerstenau discloses a method and system for determining molecule property of large complex molecules with feature limitations substantially similar to the claimed invention (Abstract and Summary of the Invention). According to Fuerstenau, the method includes steps:

mixing molecules to form a mixed solution of complex molecules for analysis, performing electrospray ionization mass spectrometry to obtain spectroscopic data of the molecule complexes (Summary of the Invention, col. 3, lines 1-9, col. 4, lines 17-39, cols. 7-8, for example),

using the spectral data above to calculate binding constant for small molecules complex in electrospray ionization, residues for the binding of each small molecule (col. 1, lines 40-59, col. 4, lines 30-39). It's also noted that binding energy and activation energy used in molecules complex characterization are well-known in the art (see Jindal, patent application publication no. US 2002/0150926 A1),

repeating the procedure steps above or feedback the experimental values as desired in order to obtain a physical property (col. 7, lines 3-24, lines 35-57, col. 8, lines 3-31, for example), and using the spectral data to characterize the properties of the complex molecule structures (col. 9, line 53 to col. 10, line 29, lines 30-50, for example). Fuerstenau does not expressly disclose a characterization of molecule structure as claimed.

Practitioner in the art at the time of the invention was made would have found Fuerstenau disclosed method of determining molecule physical properties including size, weight, surface structures on the molecules, etc. (col. 10, line 19 to col. 11, line 35) has implied the claimed limitation of characterizing molecule structure because the step of determining physical properties of the molecule complexes such as sizes, weights, surface structures in Fuerstenau are for characterizing molecule complex structure.

As per claim 8, Fuerstenau discloses computerized data processing system including plurality of means for performing steps, such as processing means for computing error data, improving resolution, etc., memory for storing computation results, as claimed (cols. 9-10, Figs 1-2, 9-10). Fuerstenau also discloses a computer would be used to simulate and improve resolution model of the characterization process (col. 10, line 19 to col. 11, line 35).

As per claims 9-15, Fuerstenau discloses complex molecules under spectroscopy analysis and simulation method using such data model to predict physical property of molecule structures. They would include a list of molecules as claimed.

As per claim 16, Fuerstenau discloses bonding strength or binding energy of complex molecules such energy required to create a bond which would inherently include heat of formation in the complex large molecules as claimed.

As per claims 17-18, Fuerstenau discloses a plurality of complex molecules which would include and not limited to the claimed invention.

***Response to Arguments***

4. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai Phan whose telephone number is (703) 305-3812.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)305-3900.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703) 872-9306, (for Formal communications),

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

November 3, 2003

*Thaiphon*  
*Patent Examiner*  
*Thai Phan*  
*AU 2123*